

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the above-referenced application. In accordance with 37 C.F.R. 1.121, as revised June 30, 2003, claims are labeled as “Original”, “Currently amended”, “Canceled”, “Withdrawn”, “Previously presented”, “New”, or “Not entered”.

1. **(Currently Amended)** A method of preparing a DNA vector, the method comprising steps of:

providing at least two collections of nucleic acid molecules that are DNA vector fragments, wherein each of the collections comprises at least two alternative DNA vector fragments to be included in the vector, and wherein;

i. DNA vector fragments within the first collection each comprise at least a first portion of a first vector element and a first portion of a second vector element, which first portion of the second vector element cannot alone provide a second vector element function; and

ii. DNA vector fragments within the second collection each comprise a second portion of the second vector element, which second portion of the second vector element also cannot alone provide the second vector element function,

the first and second portions of the second vector element being selected, and the DNA vector fragments being designed such that, when a DNA vector fragment from the first collection is ligated with a DNA vector fragment from the second collection, the second vector element function is reconstituted, wherein the second vector element is an element selected from the group consisting of: a replication element, a vector detection element, an expression element, a gene fusion element, a protein fusion element, a polylinker element, and combinations thereof;

wherein the vector detection element comprises a selectable marker that imparts a growth advantage to vector-containing cells under selection conditions, a detectable marker comprising a gene encoding a protein that produces a detectable product, or both; and

admixing at least one DNA vector fragment from each collection with one another under linkage conditions so that a hybrid molecule in which each of the DNA vector fragments is linked together is produced.

2. **(Currently Amended)** The method of claim 1 wherein:
the DNA vector fragments in the first collection each contain at least a first overhang, and
wherein the DNA vector fragments in the second collection each contain at least a second
overhang, the first overhang being complementary to the second overhang.
3. **(Canceled)**
4. **(Currently Amended)** The method of any one of claims [[1-3]] 1-2, further
comprising a step of:
introducing the hybrid molecule into a cell.
5. **(Currently Amended)** The method of claim 1 wherein each alternative DNA vector
fragment in each of the collections contains at least a portion of a vector element selected from
the group consisting of: a replication element, a vector detection element, an expression element,
a gene fusion element, a protein fusion element, a polylinker element, and combinations thereof;
wherein the vector detection element comprises a selectable marker that imparts a growth
advantage to vector-containing cells under selection conditions, a detectable marker comprising a
gene encoding a protein that produces a detectable product, or both.
- 6-11. **Canceled**
12. **(Previously Presented)** The method of claim 1 wherein the step of admixing further
comprises admixing at least one isolated nucleic acid molecule containing insert sequence.
13. **(Canceled)**
14. **(Previously Presented)** The method of claim 1 wherein:
the step of admixing comprises admixing under ligation conditions.

15. **(Currently Amended)** The method of claim 1, wherein at least one of the DNA vector fragments contains a vector element or portion of a vector element, which element comprises a selectable genetic unit.
16. **(Currently Amended)** The method of claim 1, wherein at least one of the DNA vector fragments contains a vector element or portion of a vector element, which element comprises a detectable genetic unit.
17. **(Currently Amended)** The method of claim 1, wherein a single DNA vector fragment from each of the collections is selected prior to the step of admixing; and wherein
the step of admixing comprises admixing the selected DNA vector fragments with one another under linkage conditions so that a hybrid molecule in which each of the selected DNA vector fragments is linked together is produced.
18. **(Previously Presented)** The method of claim 17 wherein the step of admixing further comprises admixing at least one isolated nucleic acid molecule containing insert sequence.
19. **(Previously Presented)** The method of claim 1, wherein the first portion of the first vector element provides a first vector element function.
20. **(Previously Presented)** The method of claim 1, wherein the first portion of the first vector element cannot alone provide a first vector element function.
21. **(Previously Presented)** The method of claim 1, wherein the first portion of the first vector element comprises the entire first vector element.